

Amendment to Claims

This listing of Claims will replace all prior versions and listings of claims in this Application.

Listing of Claims

Claim 1. (CURRENTLY AMENDED) A device-specific, physical and optical dot-gain reducing method for multi-level color-image halftoning regarding the output of a selected color-imaging multi-level halftone output device with respect to which individual pixels within a dot may have different intensities, said method comprising

based upon observed pixel-infeed-to-(multi-level)halftoning-pixel-output operational characteristics of such a device, creating a pixel-and-color-specific dot-gain reduction curve which relates, as data points for each output color of the device, selected corrections in device per-pixel pixel infeed intensity to different pre-selected, specific, multi-level, halftone geometric dot patterns of plural pixels including a contained subject pixel which is to be output from the device, where those dot patterns include a predetermined geometric pixel arrangement possessing (a) a central pixel, which is the mentioned subject pixel, and (b) the presence or absence of a defined collection and geometric distribution of immediately neighboring pixels, and further where those patterns collectively represent the halftone dot-pattern population characteristics of an expected multi-level, per-pixel-intensity-corrected, halftoned color image which is to be output by the device,

at a point in the image-processing flow of a stream of color-image pixel data which is upstream from the region where color-image device outputting takes place, and downstream from where multi-level halftoning of that data occurs, and for each pixel in the data which is to be

output ultimately to become a color-visible pixel, determining in which pre-selected multi-level, halftone dot pattern that pixel effectively lies and is associated as the contained subject pixel, and the output color intended for that pixel, ~~and then,~~

relevant to said determining, and in relation to such a determined halftone dot pattern, appropriately applying to the associated, contained subject pixel, as the sole physical and optical dot-gain-reduction instrumentality, the created dot-gain reduction curve, and

by said reduction-curve applying, reducing both physical and optical dot-gain contributions of the subject pixel in whatever multi-level halftoned image is associated with that subject pixel.

Claim 2. (CANCELED WITHOUT PREJUDICE)

Claim 3. (CURRENTLY AMENDED) The method of claim 1, wherein each pre-selected multi-level, halftone dot pattern takes the form of a three-by-three matrix of pixels.

Claim 4. (CURRENTLY AMENDED) The method of claim 1, wherein the selected output device is a multi-level printer, and said creating is based upon densitometer inspections of such different pre-selected multi-level, halftone dot patterns which have been printed by the printer as a group of plural, next-adjacent, same patterns, and wherein further, with respect to each such densitometer-inspected pattern, data points used to create the mentioned curve are determined by comparing (a) densitometer-perceived percentage-of-coverage readings that are

taken of the printed output pattern with (b) the idealized geometrical-percentage-of-coverage of non-white pixels in the pattern.

Claim 5. (CANCELED WITHOUT PREJUDICE)

Claim 6. (CURRENTLY AMENDED) A multi-level halftoning method for minimizing color-image physical and optical halftone dot-gain in the output of a multi-level halftone color-imaging output device comprising

characterizing that device's multi-level, halftone output, on a per-color basis, regarding geometric pixel-pattern-specific, multi-level dot gain which can be related to device, per-pixel, pixel-infeed intensity levels, and

from that characterizing, creating and then applying to throughput color-image files, on a pixel-by-pixel basis, a pixel-to-device infeed intensity correction value based upon geometric pixel pattern considerations, thus to minimize multi-level, device-output dot gain -- both physical and optical.